



By  
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**Area of "no data"**—Areas near shoreline not mapped owing to insufficient high-resolution seafloor mapping data; areas beyond 3-nautical-mile limit of California's State Waters were not mapped as part of California Seafloor Mapping Program

**3-nautical-mile limit of California's State Waters**

the map area: 3.1 percent (0.1 km) is in Depth Zone 2, 4.7 percent (6.1 km) is in Depth Zone 3, and 0.1 percent (0.1 km) is in Depth Zone 4. Rock and boulder, rugose (rocky outcrops), boulder fields, and asphalt mounds having high surface complexity) makes up 8.8 percent (11.4 km) of the map area: 4.7 percent (6.1 km) is in Depth Zone 2, 2.2 percent (2.9 km) is in Depth Zone 3, and 1.9 percent (2.4 km) is in Depth Zone 4. Medium- to coarse-grained sediment makes up 0.2 percent (0.3 km) of the map area: less than 0.1 percent (0.1 km) is in Depth Zone 2, 0.2 percent (0.2 km) is in Depth Zone 3, and less than 0.1 percent (<0.1 km) is in Depth Zone 4. Rugged anthropogenic material makes up 0.1 percent (0.1 km) of the map area: less than 0.1 percent (<0.1 km) is in Depth Zone 2, and 0.1 percent (0.1 km) is in Depth Zone 3 (table 1).

Golden, N.E., and Cochrane, G.R., 2013, California Seafloor Mapping Program video and photograph portal: U.S. Geological Survey, Coastal and Marine Geology Program data portal, available at <https://doi.org/10.5066/F7J1015K>.

	Total		Depth 2 m (water depth 0–20 m)		Depth 3 m (water depth 20–100 m)		Depth 4 m (water depth >100 m)	
	percent	sq km	percent of total	sq km	percent of total	sq km	percent of total	sq km
Fine to medium-grained smooth sediment	83.0	107.1	13.2	17.0	64.5	83.3	5.3	6.8
Mixed smooth sediment and rock	7.9	10.1	3.1	4.1	4.7	6.1	0.1	0.1
Rock and boulder, rugged	8.8	11.4	4.7	6.1	2.2	2.9	1.9	2.4
Medium to coarse-grained sediment	0.2	0.3	<0.1	0.1	0.2	0.2	<0.1	<0.1
Anthropogenic, rugged	0.1	0.1	<0.1	<0.1	0.1	0.1	0.0	0.0

**Figure 1.** Detailed view of substrate classes mapped west of Point Conception (see Box A, on map, for location): Depth Zone 3 (30 to 100 m), and Slope Classes 1 and 2 ( $0^{\circ}$ – $30^{\circ}$ ). Fine- to medium-grained smooth sediment is shown in shades of green; mixed smooth sediment and rock is shown in shades of tan; and rugose rock and boulder is shown in shades of pink. Bathymetric contours (40, 50, 60, and 70 m) shown for depth reference.

Mixed smooth sediment and rock  
Depth Zone 3, Slope Class 2

Rock and boulder, rugose  
Depth Zone 3, Slope Class 1

Fine- to medium-grained smooth  
sediment, Depth Zone 3, Slope Class 2

Fine- to medium-grained smooth  
sediment, Depth Zone 3, Slope Class 1

**Figure 2.** Acoustic-backscatter image (see sheet 3) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 1 (Box A on map). Brighter areas indicate coarse-grained, rough, or hard seafloor; darker areas indicate unconsolidated (loosely packed) sediment. Northwest-southeast-trending areas of high backscatter are data-collection artifacts. Shown substrate classes from figure 1 included for comparison. Bathymetric contours (40, 50, 60, and 70 m) interpreted for depth reference.

**Figure 3.** Rugosity (characterization of roughness derived from bathymetry) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 1 (Box A on map). Rugosity values are displayed in muted "rainbow" color spectrum that ranges from purple (low rugosity) through green (medium rugosity) to red (high rugosity). Northwest-southeast-trending areas of high rugosity are data-collection artifacts. Interpreted substrate classes from figure 1 included for comparison. Bathymetric contours (40, 50, 60, and 70 m) shown for depth reference.

**Figure 4.** Detailed view of substrate classes mapped east-southeast of Point Conception (see Box B, on map, for location); Depth Zones 2 and 3 (intertidal to 100 m), and Slope Classes 1 and 2 ( $0^{\circ}$ – $30^{\circ}$ ). Fine- to medium-grained smooth sediment is shown in shades of green; mixed smooth sediment and rock is shown in shades of tan; rugose rock and boulder is shown in shades of pink; medium- to coarse-grained sediment is shown in shades of yellow; and rugged anthropogenic features are shown in shades of purple. Bathymetric contours (20, 30, and 40 m) shown for depth reference.

**Figure 5.** Acoustic-backscatter image [see sheet 3] draped over shaded-relief bathymetry (see sheet 2) for same area as figure 4 (Box B on map). Brighter areas indicate coarse-grained, rough, or hard seafloor; darker areas indicate unconsolidated (loosely packed) sediment. Interpreted substrate classes from figure 4 included for comparison. Bathymetric contours (20, 30, and 40 m) shown for depth reference.

**Figure 6.** Rugosity (characterization of roughness derived from bathymetry) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 4 (Box B on map). Rugosity values are displayed in muted "rainbow" color spectrum that ranges from purple (low rugosity) through green (medium rugosity) to red (high rugosity). Interpret substrate classes from figure 4 included for comparison. Bathymetric contours (20, 30, and 40 m) shown for depth reference.

Sheet 5 in Johnson, S.Y., Darshall, P., Cochran, G.R., Hartwell, S.R., Gaiden, N.E., Kvitak, R.O., and Davenport, C.W. (S.Y. Johnson & S.A. Cochran, eds.), California State Waters Map Series—Offshore of Point Conception, California: U.S. Geological Survey Open-Report 2018-1024, pamphlet 38 p., 9 sheets, scale 1:24,000. <https://doi.org/10.3133/ofr20181024>.

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